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ABSTRACT

This paper investigates the economic feasibility of adapting office technology course work for students with limited English proficiency at a proprietary school. Learning guides, textbooks, computer-aided instruction, and documentation supporting the office software being taught were examined for possible adaptation. The following conclusions are reported: (1) all foreign-speaking students must be tested in English, math and reading comprehension before beginning the course; (2) instructors must spend extra time during the beginning of the course to establish a positive relationship with the students and familiarize the students with format, objectives, and procedures; (3) foreign students' learning style strengths can be used to compensate for their weaknesses; (4) supporting handouts and glossaries need to be developed; (5) the relationship of the course work to the real world needs to be emphasized and reinforced; (6) feasibility considerations include instructor labor and time costs, and benefits include increased instructor availability to all students as the foreign-speaking students become more successful and independent; and (7) the total modification costs are minimal. (The paper contains a five-item bibliography.) (CML)

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Report on

THE FEASIBILITY OF ADAPTING OFFICE TECHNOLOGY READING MATERIALS FOR FOREIGN-SPEAKING STUDENTS

by
Barbara Ann Carter

Submitted to
Dr. Beverly Heneghan
English 115
Northern Virginia Community College
November 22, 1988

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THE FEASIBILITY OF ADAPTING OFFICE TECHNOLOGY READING MATERIALS FOR FOREIGN-SPEAKING STUDENTS

This document is a proposal for a research paper required in English 115, Technical Report Writing. It clearly defines a topic concerning the reading difficulties of foreign speaking students and shows it as a sound research subject. The proposal is divided into three parts: (1) definition of the problem, (2) an analysis and approach to the problem, and (3) explanation of how the approach meets other RFP requirements.

Definition of Problem

Advanced technology has aided many technical and educational fields, including adult vocational education; however, the current methods of adult instruction are becoming outdated while the number of foreign-speaking students entering the technical field of study continues to grow. Courses are developed with the learning needs of the advanced English speaking students in mind. Allowances for the extra time the foreign-speaking students need are not taken into consideration. Consequently, the special reading needs of these students are not being met. Since these students are rapidly becoming the majority, their reading difficulties need to be addressed.

The proposed research paper will therefore, investigate the following question: Is it economically feasible for the proprietary school to adapt the office technology course work for the foreign-speaking students? It is assumed that the proprietary school has an office technology curricula in place in more than one school and the students in question are enrolled at the present time. The paper will allow the school to evaluate the existing system and determine if modification of the course work would be profitable.

Analysis of the Problem

The analysis included in the research paper will answer the following questions:

1. Would conversion decrease the course work completion time of these students?
2. How much time will the modified reading material save both the instructors and the students, if any?
3. What type of modification is appropriate of the reading materials systems available?
4. Does the amount of reading required in the course cause problems?

5. Will modification require more or less time with the instructor? If so, how much more?
6. How soon will the modification of reading material improve student progress?
7. Could the modification be used with the current curricula in place, or would extensive revision be necessary?
8. How long would it take to modify the reading material?

The data received from the research of the preceding questions and others will be compared to reach a conclusion about the feasibility of the modification. The proposed research paper will be organized as follows:

I. Introduction of Subject Problem
   - A. Subject
   - B. Purpose
   - C. Scope
   - D. Plan of Organization

II. Reading Material Modification Components
   - A. Learning Guides
   - B. In-house Computer-Aided Instruction
   - C. Purchased Computer Software Documentation
   - D. Textbooks

III. Learning Guides
   - A. Cost of Each Type
   - B. Effectiveness
   - C. Recommendation

IV. In-house Computer-Aided Instruction
   - A. Cost of Each Type
   - B. Effectiveness
   - C. Recommendation

V. Purchased Computer Software Documentation
   - A. Cost of Each Type
   - B. Effectiveness
   - C. Recommendation

VI. Textbooks
   - A. Cost of Each Type
   - B. Effectiveness
   - C. Recommendation

VII. Feasibility of Modification
   - A. Labor Savings
   - B. Time Saved
   - C. Total Modification Costs
   - D. Time Needed for Installation

VIII. Conclusion and Final Recommendations

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ABSTRACT

To determine the feasibility of adapting office technology reading materials for foreign-speaking students, I examined current reading materials and computer-aided instruction and documentation. Since the enrollment of foreign-speaking students at technical proprietary schools continues to grow, proprietary schools are ill equipped to teach these students English language intensive courses. Four important reading materials components were assessed and the following conclusions reached: 1) All foreign-speaking students must be tested in English, math, and reading comprehension before their entry into the classroom. 2) Instructors must spend extra time during the beginning of the courses to establish a positive relationship with the students and to familiarize the students with the format, objectives, and procedures. 3) Foreign students' learning style strengths can be used to compensate for their weaknesses. 4) Supporting handouts and glossaries need to be developed. 5) The relationship of the course work to the real world needs to be emphasized and reinforced. Feasibiilty considerations include instructor labor and time costs--labor and time intensive initially--but increased instructor availabilty to all students as the foreign-speaking students become more successful and independent. The total modification costs are minimal, as current reading material with modification are kept in place. The highest cost is in instructor time, which diminishes as modifications are put into place.

Report on

THE FEASIBILITY OF ADAPTING OFFICE READING MATERIALS FOR FOREIGN-SPEAKING STUDENTS

1.0 INTRODUCTION

During the last decade, the enrollment of foreign-speaking students in office technology courses at proprietary schools has increased at such a rapid rate, foreign-speaking students will soon be in the majority. Current course work was developed with more advanced English-speaking students in mind. Allowances for the additional time and modifications required by the foreign-speaking students are not considered. Modification of reading material is nonexistent or spotty at best. Visual support material is virtually nonexistent. Reading comprehension is difficult to measure until written tests are taken. From the beginning of the course, modified reading materials would build self esteem, increase student success rate, and decrease the attrition rate of these students.

The purpose of this paper is to analyze the economic feasibility of adapting the office technology course work for foreign speaking students. This study researches and develops a project to examine the reading material components and suggest simple, inexpensive modifications.

Because modification of reading materials can be expensive and time consuming, the scope will be limited to current components in office technology courses. Particular difficulties of foreign-speaking students will be considered.

Analysis is divided into four sections: the learning guides, in-house computer-aided instruction, purchased computer software documentation, and textbooks. These sections explore and provide information on reading material modification. Following the research data are conclusions and recommendations.

2.0 READING MATERIAL MODIFICATION COMPONENTS

Vocational education can offer viable career options to foreign-speaking students. The hands-on aspect helps them to feel successful immediately, but the enormous amount of required technical reading can discourage and frustrate these very students. Joy E. Reid, in a study of the learning style preferences of English as a Second Language(ESL) students, found that ESL students may use most of their time and effort trying to

adjust to their new learning situations (88) instead of concentrating on learning the new reading material. To further complicate the issue, in another study cited by Reid, Vigna and Martin (1982), 84% of these students preferred to work alone. Working alone doesn't reveal their reading difficulties to the instructors. The lack of initial tests and assessments and reading material that doesn't even consider their reading and comprehension difficulties only adds to the problem. Simplified key terms, short sentences, general-to-specific information, and audio-visual support material must be used in instructing these students. Factors to consider when evaluating modification possibilities include learning guides, in-house computer-aided instruction, purchased computer software documentation, and textbooks. Following discussion of these considerations, a summary evaluates the findings.

3.0 LEARNING GUIDES

Learning guides are a basic component of proprietary individualized office technology courses. They explain, give directions, provide exercises, and coordinate the various components of each course of study. Difficulty arises when manipulation of multiple resources and reading materials are required. Students are left to set their own priorities as to what to do first and which activities have the most importance. Overwhelmed by the choices, they take the easiest way out and become frustrated when their efforts are rewarded by poor performance.

Students need briefings by the instructor regarding objectives, clarifications, required resources and their location. An estimate of work to be covered also needs to be previewed with the student each day. Separate glossaries need to be provided when necessary. Modification of the learning guides will be evaluated with regard to cost and effectiveness. Following discussion of these considerations, recommendations will be made.

Cost of Each Type

Modification of the learning guides would be relatively inexpensive. Essentially, they are written well. Course objectives, directions, and resources are clearly stated. However, all information seems to have the same importance. A brief written overview with priorities stressed, along with a personal briefing by the instructor would be all that is necessary. Cost would be minimal. It is encouraging to see learning guides for new course work include summaries and "Check Your Understanding" sections.

Effectiveness

Since the learning guides are so essential to the course, any modification that kept the students on track would be valuable.

A student floundering from the beginning of the course will have increasing difficulty as he goes on. A clear understanding of what he will be doing and how he will know he is doing it right is important. Success breeds success.

Recommendation

1. Continue use of the learning guides.
2. Emphasize to the students the importance of the learning guides.
3. Spend extra time during the first few lessons to establish good study habits, while familiarizing them with the format and objectives of the learning guide.
4. Remind students to recheck the lesson objectives at the end of a lesson to be sure they understand them.
5. Assist the students in planning their time.

4.0 IN-HOUSE COMPUTER-AIDED INSTRUCTION

Often proprietary schools have their own computer-aided instruction. This method requires reading from a computer screen, manipulating a keyboard, and note taking. Based on adult learning theories, these programs are well organized. Students use self-directed learning activities, both kinesthetic and tactile, with interactive feedback. In a 1987 study by Joy E. Reid in 1987, foreign-speaking students strongly preferred kinesthetic and tactile learning styles (92). See figure 1 below.

Learning Style Preference Means According to Language

	Learning Style					
Language	Visual	Auditory	Kinesthetic	Tactile	Group	Individual
Arabic	13.75	14.06	10.09	14.53	11.51	12.84
Spanish	13.39	13.29	15.11	14.18	10.79	12.79
Korean	14.07	13.73	14.58	14.48	11.42	12.46
Thai	13.40	12.83	14.63	14.09	11.49	12.94
Indonesian	13.41	13.78	13.90	13.47	11.15	13.07
English	12.12	13.82	13.64	12.69	10.08	13.13

Note: Preference means 13.50 and above = major learning style Preference: mean of 11:50-13.49 = minor learning style preferences; means of 11.49 or less = negative learning style preference.

Figure 1 Adaptation of Learning Style Preferences According to Languages (Courtesy Reid 96).

However, an overwhelming amount of information is presented before the students get to apply what they have learned. The key to computer-aided instruction is good note taking. Foreign-

speaking students either copy everything word for word or do nothing. Operating a keyboard, as instructed by the computer is more than they can handle. Understanding the purpose of the computer-aided instruction is something else again.

Instructors must set the stage for computer-aided instruction. Course objectives, key words, and topics need to be previewed with the student. Handouts regarding note taking should be provided. Initially the student would show the instructor his notes each day until he understands how to take notes. Robert Gordon and Joan Friedenberg for the National Center for Research in Vocational Education determined that simplifying written materials used by ESL students would help then grasp the contents more easily (22). The following section analyzes cost. effectiveness, and recommendations for modification of the in-house computer-aided instruction.

Cost of Each Type

Cost for modification of in-house computer-aided instruction would be minimal. Time spent by the instructor initially would be heavy since the instructor would first have to review the course objectives and reading materials to establish key words and topics to emphasize. The payoff in student progress would more than compensate for the instructor time investment. Instructors could share the task.

Effectiveness

Heavy use of computer-aided instruction is required during introductory stages of course work. Computer-aided instruction provides necessary background information and simulated practice with applications software. Since the instruction is so English language skill intensive, it harms foreign-speaking students more than it helps them. Therefore, attention must be paid to improving its format: break ideas into smaller segments and explain repetitive key terms and ideas. Individual attention from the instructor will pay off handsomely with these students who are not used to the greater individualism and lack of supervision in American education.

Recommendation

1. Spend more instruction time with students during the beginning of computer-aided instruction.
2. Assist students in breaking ideas down into smaller segments.
3. Reinforce student note taking.
4. Either revise computer-aided instruction to be more problem solving interactive or eliminate it entirely.

5.0 PURCHASED COMPUTER SOFTWARE DOCUMENTATION

Since the office technology course is built around current popular software, documentation supplied by the manufacturer

becomes important. Often written by engineers or programmers, documentation is hard to read and understand. Either too much information is given or not enough simple step-by-step details are given. Students are caught between their desire to be self directed and the frustration of decoding software documentation. As Malcolm Knowles, a leading authority on adult education and training states, "...Software manuals are geared to teaching us how a machine works rather than helping us learn how to use the machine to perform real-life tasks..." (173). Foreign-speaking students with limited English proficiency are unable to identify the special software vocabulary needed to learn "how to use the machine to perform the software applications."

Cost of Each Type

Preparing handouts would be a big part of modifying purchased computer software documentation. The Francis Tuttle Vo-Tech Center, involved in software development for three years, found that creating one's own software was too expensive and time consuming: "Creating a new software package requires an estimated 150 hours of development time for every hour students spend using it" (37).

Instructors must validate and implement each software program. Worksheets, handouts, and glossaries must be prepared. Since support materials are so important to foreign-speaking students, care needs to be taken regarding the simplification of documentation and the sequencing of instructions. Obviously, all this preparation takes time. Curriculum writing teams on the corporate level could evaluate commercial software and provide specific supplements for foreign-speaking students. The reading materials could then be piloted by the schools in the field, for feedback.

Effectiveness

Clearly written documentation is the most important feature of a software package. A student's first introduction to a software package is through its documentation and tutorials. Whether a student feels initially comfortable with the commands, key terms, screens, menus, and capabilities or is overwhelmed and confused is a key factor in successful application of the program. Instructors need to take the time to give the students a good start, including a one-to-one briefing, handouts, and glossaries. Much less instructor time would be needed later in the course if this initial time is spent with them. It is wiser to catch students' misconceptions initially than deal with them in the middle of a project when the students' frustration levels are high.

Recommendations

1. Provide handouts and glossaries.
2. Instruct one-to-one during the first lesson.

3. Review objectives, concepts, key terms and commands.
4. Explain why the student needs to take certain actions.
5. Relate the software applications to the real world.

6.0 TEXTBOOKS

Proprietary schools use a variety of textbooks to support the purchased computer software and to teach English, mathematics, typing, and office practices. Entering students are expected to have an eighth grade proficiency in English, reading comprehension, and mathematics. Many English-proficient students don't have these abilities, and foreign-speaking students are further handicapped by limited English-proficiency. Often technical textbooks are written to support a college level lecture course. The assumption is the students want to know the theory (how the machine works). The instructor in the college classroom will introduce and explain the theories and the reading material supports his lectures. Students in proprietary schools are in individualized programs which stress hands-on learning with little or no emphasis on theory. Textbooks are not read in their entirety. Often courses require 3 to 4 textbooks with selected readings from each.

This type of instruction meets students' career needs because they want to learn "how to do something so they can get a better job." In order for the students to be self-directed with their hands-on experiences, the instructors must supplement the supporting textbooks. Students need to be taught how to read a technical book, how to use a table of contents and an index, and how to make the textbook work for them.

Dr. Jo Ann Crandall, Director of the Communication Services Division of the Center for Applied Linguistics, reports that "we have few commercially available texts that combine vocational and language skills training into a coordinated text" (14). The average person can't understand computer textbooks. The vocabulary is too technical, complex ideas are presented too early or unnecessarily, hands-on learning takes place after long reading sessions, and the format is not conducive to learning (fine print, lengthy paragraphs with important instructions embedded in them, poor sequencing, sudden change of formatting). Students become confused and frustrated; learning stops. On-to-one instruction time with students rises sharply. Instructors must demonstrate how to use a technical textbook and provide supporting reading materials.

Cost of Each Type

Commercial textbooks are a core part of the office technology course. Since they are mainly reference material, their cost can kept to a minimum. However, students use approximately 20 commercial textbooks. Modifying textbooks already in the curriculum would keep costs down. It also would take considerable time.

Effectiveness

Commercial textbooks are a valuable tool in the office technology courses. They can (1) provide an overall picture of a software package, (2) introduce commands and procedures of the software package, and (3) provide sequential exercises to familiarize the students with the capabilities of the software package. However, what the textbooks "can" provide and "do" provide are two different things. The textbooks predominately present information in an unclear manner with commands buried in text and assumptions made regarding the readers' background that assumes more computer knowledge than the average reader has. Instructor prepared handouts, diagrams, and glossaries will allow effective use of these reference materials.

Recommendations

1. Using questionnaires, survey students' reading difficulties with the textbooks.
2. Provide handouts, diagrams, and glossaries.
3. Stress the important points, procedures, and processes of each textbook before the students starts reading.
4. Explain to the students how to make the text work for them.

7.0 FEASIBILITY OF MODIFICATION

Labor Savings

With individualized hands-on instruction, instructor time can be labor intensive when student difficulties arise. The fewer the individual student problems, the more the instructor can be available to the whole class. Lack of understanding of course material, procedures, and process causes the most difficulty. Initial instructor labor costs--assessment of students' needs, research, preparation and gathering of materials, scheduling of conferences, and presentation of materials will ultimately pay off. Since the primary objective is for the students to increase their success rate and decrease their attrition rate, the time is well spent.

Time Saved

Foreign-speaking students lose time because they are limited in English-proficiency. This lost time affects their success rate and the school's attrition rate. Instructors find they are spending more time with these students trying to assess and address their needs. This dilemma can be very frustrating and unproductive for both the instructors and students. Initial time spent preparing support reading materials and preparing students with each new course will result in less instructor/student time later in the course.

Total Modification Costs

The total modification costs are minimal. The cost is mostly in instructor time, since the handouts, diagrams, and glossaries would be instructor made. As the instructor learns to assess the foreign-speaking students' needs, he can evaluate and order new reading materials. Until that time, the instructor will modify current reading materials. As the instructors better prepare the students for each course, instructor time with each student will be less.

8.0 CONCLUSION AND FINAL RECOMMENDATIONS

Modification of reading materials for foreign-speaking students in proprietary schools is feasible. Though only proposals for modification are presented, the increase of the students' self esteem, independence, and success rate makes the modification cost-effective. If instructors receive support from management, especially during the initial breaking-in time, the transition to increased modification of reading materials should run smoothly. Once instructors assess students' needs and research and modify the reading materials, the instructors can be free to spend more time with all the students.

Estimating that foreign-speaking students require 40% more time to complete the office technology course than English proficient students, any increase in course completion time will lessen the chance of students' losing federal funding due to hours behind schedule. The foreign-speaking students will gain confidence and lose their fear of failure. Foreign-speaking students often fear they will be dropped by the proprietary school because of their slower rate of learning.

Working with the strengths of foreign-speaking students' preferences for self-actualized, tactile-kinesthetic learning, while incorporating modifications to strengthen the weaknesses of cultural differences, low self esteem, and poor understanding of the reading material, can make better use of the students' learning styles until new ones can be adapted.

Final Recommendations

1. Test all foreign-speaking students in English, math, and reading comprehension before entry into the classroom.

2. Spend extra time with the foreign-speaking students--during the beginning of the courses--to familiarize them with the format, objectives, and procedures.

3. Develop and provide supporting handouts and glossaries.

4. Reinforce the relationship of the course work to the real world.

5. Establish a positive relationship with the foreign-speaking students in order to provide feedback and support.

6. Use the foreign-speaking students' learning style strengths to compensate for their weaknesses.

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